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10/627,501

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Heinz Zoch

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SMITH, GAMBRELL & RUSSELL  
SUITE 3100, PROMENADE II  
1230 PEACHTREE STREET, N.E.  
ATLANTA, GA 30309-3592

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CHEUNG, WILLIAM K

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* HEINZ ZOCH, WERNER KALBITZ,  
STEPHEN LUDTKE, THOMAS LUTHGE,  
and GERD TAUBER

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Appeal 2008-6193  
Application 10/627,501  
Technology Center 1700

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Decided:<sup>1</sup> May 01, 2009

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Before ADRIENE LEPIANE HANLON, MARK NAGUMO, and  
KAREN M. HASTINGS, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup>The two-month time period for filing an appeal or commencing a civil action, as recited in 37 CFR § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1, 3-10, and 18-25. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

## BACKGROUND

The invention relates to a gas black suspension useful as an ink formulation (Spec. 1:4-7).

Claim 1 is illustrative:

1. An aqueous, colloidal, freeze-resistant and storage-stable gas black suspension, comprising 2-30 wt.% gas black having a DBP number of 40-200 ml/100g, 0-40 wt.% carbon black, a dispersion-supporting additive, a biocide and water, and having a zeta potential of less than -10 mV, a surface tension of greater than 50 mN/m and an average particle size of less than 200 nm wherein the dispersion-supporting additive is a neutralized styrene-acrylic acid copolymer with an average molecular weight of 1000-20,000, having an acid value of 120-320 and which is present in the amount of 1 to 50 wt.%.

The Examiner relies upon the following prior art reference in the rejection of the appealed claims:

Nagasawa

US 5,609,701

Mar. 11, 1997

The Examiner has rejected all the claims under 35 U.S.C. § 103(a) as being unpatentable over Nagasawa.<sup>2</sup>

Appellants present arguments concerning the rejected claims as a group (Br. 4-13). Appellants do not advance an argument that is reasonably specific to any particular claim on appeal. Thus, in accordance with 37

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<sup>2</sup> The Examiner inadvertently includes claims 12, 14, 15, and 17 in the Final Rejection and in the Examiner's Answer (Ans. 3). All these claims were previously canceled by Appellants (*see* Amendment filed August 6, 2008).

C.F.R. § 41.37(c)(1)(vii), we select claim 1 as the representative claim on which our discussion will focus.

The Examiner acknowledges that Nagasawa does not expressly describe “gas black”, which is a carbon black produced by a specific process. Nonetheless, the Examiner finds that the carbon black of Nagasawa generically includes the claimed gas black and its properties as claimed, and accordingly concludes that:

Motivated by the expectation of success, it would have been obvious to one of ordinary skill in [the] art to recognize that all carbon blacks would be suitable for obtaining the carbon black dispersion of Nagasawa to obtain the gas black [suspension] being claimed[, i]n view of the limited number of species of carbon black available in the carbon black industry.

(Ans. 5).

#### ISSUE

Have Appellants shown reversible error in the Examiner’s conclusion that Nagasawa’s generic teaching of “carbon black” would have suggested the “gas black” species as claimed? If not, have Appellants established that the evidence submitted in support of unexpected results is both unexpected and reasonably commensurate in scope with the claimed subject matter?

We answer these questions in the negative.

#### FINDINGS OF FACT (FF)

Findings of fact throughout this opinion are supported by a preponderance of the evidence.

Appellants admit in the Background section of the Specification that aqueous carbon black suspensions using water-soluble acrylic resins are known for use in the production of printing inks (Spec. 1:6-14). It was

further known to use carbon blacks with a particle size no greater than 30 nm and whose DBP value is at least 75 ml/100 g (*id.*).

The Examiner correctly found that Nagasawa describes that carbon black was conventionally finely dispersed in an aqueous medium and stabilized with a dispersion additive of styrene(meth)acrylic resin (col. 1, ll. 32-36). These dispersions are said to be useful for water-based pigment inks (col. 1, ll. 15-32).

Nagasawa also describes that the carbon black may be “prepared by cracking or imperfectly burning natural gas, and a hydrocarbon liquid such as heavy oil, tar and the like.” (col. 1, ll. 25-32).

The Examiner correctly found that “gas black” is a type of carbon black produced by a specific process (Ans. 5).

Gas black is produced by the “Degussa<sup>3</sup> gas black process” which has been in use since 1935 and is similar to the channel black process (*Ullmann* pp. 350, 354; *DTBP*, translation portions labeled (A), (B)).<sup>4</sup>

Appellants’ Specification describes that the “gas black” may be chosen from a list of apparently commercially available gas blacks (Spec. 2:18-24). Appellants’ Specification further describes that “pigment blacks” may be produced by the furnace, channel, or lamp black process and “can also be used as carbon blacks” (Spec. 2:24-31). Appellants’ use of these terms is consistent with the Examiner’s finding that carbon black is a generic

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<sup>3</sup> The real party in interest for this appeal is Degussa GmbH (Br. 1).

<sup>4</sup> Appellants provided excerpts from two books during prosecution (*see* Response filed Aug. 8, 2006; *see also* Br., Evidence Appendix): *Ullmann’s Encyclopedia of Industrial Chemistry* 359-360 (6th ed. Vol. 6, 2003) (i.e., *Ullmann*) and Horst Ferch, *DTBP Technologie des Beschichtens-Pigmentrusse* 27, 33, 46, 48, 50-51 (1995) (i.e., *DTBP*, as translated in portions (A)-(G); trans. provided by Appellants).

term that includes gas black as a species thereof. Indeed, the Appellants recognize that “gas black” is a type of carbon black (Br. 6).

One of ordinary skill in the art would have known that gas black is widely used as a pigment in printing inks and lacquers (*Ullmann*, p. 360) and that its only use “nowadays [is] practically only in the area of pigments” (*DTBP*, translation portion labeled (C)). One of ordinary skill in the art would have also known that gas blacks have “good wettability, which markedly improves their dispersion capability” compared to furnace blacks (*id.*).

#### PRINCIPLES OF LAW

The burden is on Appellant to identify reversible error in the appealed § 103 rejection. *Cf. In re Kahn*, 441 F.3d 977, 985-986 (Fed. Cir. 2006); *see also* 37 C.F.R. § 41.37(c)(1)(vii).

The Supreme Court has instructed that although the teaching, suggestion, and motivation test “captured a helpful insight,” an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. The question to be asked is “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *KSR*, 550 U.S. at 417.

A statement that something is prior art is binding on an applicant for determinations of anticipation and obviousness. *See Constant v. Advanced*

*Micro-Device, Inc.*, 848 F. 2d 1560, 1570 (Fed. Cir. 1988) and *In re Nomiya*, 509 F.2d 566, 571 n.5 (CCPA 1975) (A statement by an applicant that certain matter is prior art is an admission that the matter is prior art for all purposes).

It is well established that the size of a genus is a factor in determining the obviousness of a claimed species. Indeed, a small genus can be a description of each species within the genus. *In re Petering*, 301 F.2d 676, 682 (CCPA 1962). Likewise, a prior art description of a chemical genus often renders a claimed species within the genus prima facie obvious to one of ordinary skill in the art, especially when the claimed composition is used for the identical purpose taught by the prior art. *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

#### ANALYSIS

Appellants do not dispute that there are a limited number of “carbon blacks” or that “gas black” is a type of “carbon black.”<sup>5</sup> Instead, Appellants main contention is that gas black is not interchangeable with other types of carbon blacks mentioned by Nagasawa because of differences in properties said to be recognized by the industry (Br. 8). Appellants contend that the carbon black of Nagawasa is a furnace black or channel black (Br. 5); and Appellants contend that Nagasawa does not disclose the properties and

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<sup>5</sup> In addition, Appellants do not dispute the Examiner’s holding that that the use of the neutralized styrene-acrylic acid copolymer as claimed would have been obvious to one of ordinary skill in the art based on Nagasawa’s description of a dispersion additive of styrene(meth)acrylic resin. Appellants also do not dispute the Examiner’s reasonable inference that the use of a biocide as claimed, for its known function, would have been obvious to one of ordinary skill in the art.

characteristics of the “gas black” as claimed (Br. 4). These contentions are not persuasive of reversible error.

First, the Examiner is not explicitly relying upon the carbon black of the invention described in Nagasawa, rather, the Examiner is relying on the carbon black suspension discussed in the Background section of Nagasawa.

Furthermore, Nagasawa describes the carbon black of his invention as being prepared by oxidizing a neutral carbon black “*such as* furnace black [or] *channel black*” (col. 3, ll. 26-28; emphasis provided). According to *DTBP*, provided by Appellants, the “channel black” process “corresponds to the Degussa gas black process” (*DTBP*, translation portion (B)). Thus, Appellants’ contention that gas black has different properties than all other carbon blacks mentioned by Nagasawa is contradicted by the preponderance of the evidence of record.

Based on the foregoing, it is reasonable to conclude that the use of a gas black in a suspension as claimed would have been *prima facie* obvious as “gas black” is a well known species within the limited genus of carbon black disclosed in Nagasawa. Furthermore, it is reasonable to find that one of ordinary skill in the art would have expected the use of gas black to have resulted in a stable suspension as claimed. *See also, e.g., KSR*, 550 U.S. at 420-421 (one of ordinary skill in the art is “also a person of ordinary creativity, not an automaton”).

In addition, the evidence of record establishes that gas black is widely used as a pigment in printing inks and lacquers (*Ullmann*, p. 360; *DTBP*, translation portion labeled (C)) and that gas blacks have “good wettability, which markedly improves their dispersion capability” (*DTBP*, translation portion labeled (C)). Thus, the use of “gas black” as a pigment, especially in



an amount as little as 2 wt. %, appears to be no more than the predictable use of “gas black” for its established functions. *KSR*, 550 U.S. at 417.

Appellants have also not provided any credible evidence or reasoning to refute the Examiner’s reasonable inference that once “gas black” is used as at least 2 wt. % of the carbon black in the suspension of Nagasawa, the properties as claimed would have naturally followed (e.g., Ans. 5)<sup>6</sup>. Further, Appellants also admit that it was known to use carbon blacks with a particle size no greater than 30 nm and whose DBP value is at least 75 ml/100 g (compare to the claimed DBP value of 40-200 ml/100g and the claimed particle size of less than 200 nm).

For the foregoing reasons and those stated in the Answer, we agree with the Examiner’s findings in support of obviousness for claim 1 based on Nagasawa.

#### *Unexpected Results*

Having determined that prima facie obviousness has been established, we must begin our consideration anew and consider any evidence of obviousness against any argued evidence of non-obviousness, such as the data provided in the Tauber Declaration filed August 18, 2006<sup>7</sup>. *See In re Oetiker*, 977 F. 2d 1443, 1445 (Fed. Cir. 1992).

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<sup>6</sup> *See also, Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (holding that the recognition of a result flowing naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious).

<sup>7</sup> The Declaration filed January 30, 2007 was not entered by the Examiner and is accordingly not considered. Appellants had 60 days to petition the decision of the Examiner to deny entry of that Declaration, which was filed after a final rejection. 37 C.F.R. § 1.181(a) and (f).

The burden rests with Appellants to establish that the results are unexpected compared to the closest prior art, and that they are commensurate in scope with the claimed subject matter. *See, e.g., In re Peterson*, 315 F.3d 1325, 1330-1331 (Fed. Cir. 2003); *In re Kulling*, 897 F.2d 1147, 1149 (Fed. Cir. 1990). We determine that Appellants have not met this burden.

First, Appellants do not provide evidence that the results are actually unexpected: the Tauber Declaration refers to the results as showing “there is a difference between gas black and other carbon blacks when used in aqueous suspensions” (Decl. 1), but does not indicate that the results were seen to be unexpected or unpredictable. “[A]ny superior property must be *unexpected* to be considered as evidence of non-obviousness.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1371 (Fed. Cir. 2007). Indeed, this record reflects that one of ordinary skill in the art would have expected that a gas black suspension would have “markedly improve[d] . . . dispersion capability” over furnace black (*see DTPB*, translation part C).

Second, Appellants have not explained how the data discussed by Tauber reflects a comparison with the closest prior art; nor have they explained how the comparison of one composition within the broad genus of claimed compositions reflects data that is commensurate in scope with the claims. Claim 1 is not limited to the composition illustrated in inventive Example 2 (e.g., Decl. 4, Table 5); for example only, claim 1 requires as little as 2 wt.% gas black whereas the only inventive example 2 contains 15 wt.% gas black. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984) (“an applicant relying on comparative tests to rebut a prima facie case of obviousness must compare his claimed invention to the closest prior art.”);

and *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978) (“Establishing that one (or a small number of) species gives unexpected results is inadequate proof, for ‘it is the view of this court that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.’”).

Hence, it can hardly be said that the sole exemplified inventive example described in the Tauber Declaration establishes results that would be expected to be obtained across the entire breadth of the claimed composition.

### CONCLUSION

On balance, the evidence, including the prior art of record and the Appellants’ objective evidence of non-obviousness, does not weigh in favor of a determination that the Examiner reversibly erred in rejecting the claims on appeal under §103.

Accordingly, we sustain the Examiner’s § 103 rejection of claims 1, 3-10, and 18-25 based on Nagasawa.

### ORDER

The Primary Examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a).

AFFIRMED

Appeal 2008-6193  
Application 10/627,501

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SMITH, GAMBRELL & RUSSELL  
SUITE 3100, PROMENADE II  
1230 PEACHTREE STREET, N.E.  
ATLANTA, GA 30309-3592